REMARKS

The Applicants wish to thank the Examiner for the careful consideration of the application.

Claims 1 – 20 were in the application. Claims 1 – 17 were rejected by the Examiner under 35 U.S.C. §103(a) as being unpatentable over US Patent No. 6,350,004 (Askren) in view of US Patent No. 5,644,344 (Haselby). Claims 18 – 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Askren in view of Haselby and further in view of US Patent No. 6,733,100 (Fujita et al.).

Independent claims 1, 11, and 18 have been amended to indicate that the defective drops include spear drops. The rejections under 35 U.S.C. §103(a) as applied to the amended claims are respectfully traversed.

Discussion

The Standard Under 35 U.S.C. §103(a)

"To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." MPEP 2143.

The Applicants respectfully believe that the cited references do not teach or suggest all the claim limitations of the claims as amended. Specifically, neither Askren, Haselby, nor Fujita et al. teach a correction scheme for compensating for defective ink drops fired above a threshold frequency, the defective drops including spear drops.

The Examiner states in rejecting claims 1 – 17 that "it is obvious to one of ordinary skill in the art that the driver head ejects defective drops at a particular frequency and that frequency is above a threshold frequency (i.e. 0 kilohertz). The Applicants believe that it is known that spear drops are a phenomenon that occurs at a relatively high firing rate, as discussed in the specification:

> "However, in many inkjet printers, defective drops, such as "tails", "spray drops" and/or "spear drops" can be ejected during the printing process, in addition to normal droplets of ink. These defective drops can cause rough edges that degrade quality and limit high resolution printing, which can compromise the inkjet printing process. One technique has been developed to improve edge quality by reducing the firing frequency at the edges of lines and text characters. This technique is effective, but requires image processing that may not be available or may be expensive and time consuming in certain situations." [page 2, lines 14 – 27]

and:

> "The defective drops or spear drops 620 are usually created when certain types of printheads are fired at high frequencies, such as 36 kHz. Spear drops 620 are typically ejected at 30 m/s and have an odd/even trajectory error. The nozzles 418 of the nozzle member 416 typically eject the spear drops 620 toward the center of the nozzle member 416 so that the media 630 receives spattered or rough edges of lines and text

printouts. A simulated printout is shown in FIG. 6B." [page 12, lines 5 – 11]

and:

"The amount of offset is important when using the correction scheme of the working example. In one example, rough edges are created when certain printheads fire at 36 kHz. This is because firing at 36 kHz has been found to create systematic defects, such as the spear drops 620 of FIG. 6. The correction scheme of the present invention can be selectively disabled for printing operations that fire at less than 18kHz." [page 13, lines 21 – 26].

The claims as amended thus clarify that the defect correction scheme of the present invention applies to a drop defects that occur above a non-zero threshold frequency, namely, the production of spear drops.

With regard to claim 2, the Examiner has stated that the Applicant has not disclosed that the threshold frequency of 36 kilohertz provides an advantage, is used for a particular purpose, or solves a stated problem. The Applicants respectfully disagree. As indicated by the above citations from the specification, the frequency of 36 kilohertz is the frequency at which spear drops may typically be observed in the type of printing system which may incorporate embodiments of the present invention.

The claims remaining in the application (namely, claims 1 – 20) now all include the limitation that the correction method applies to defective drops including spear drops, a limitation not disclosed in the cited references. The Applicants therefore respectfully request that the rejections under 35 U.S.C. §103(a) be withdrawn, and that the claims as amended be allowed.

The Applicants also believe that application is now in condition for allowance, and favorable action by the Examiner is respectfully requested.

Respectfully submitted,

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